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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/989,913 | 11/20/2001 | Theresa M. Buckley | BUC1073C2 | 2206 |

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EXAMINER

ZACHARIA, RAMSEY E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1773

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DATE MAILED: 03/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,913

Applicant(s)

BUCKLEY, THERESA M.

Examiner

Ramsey Zacharia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 5 is objected to because of the following informalities: an additional period (.) occurs at the end of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1, 5, 8-11, 13-15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hearst et al. (U.S. Patent 3,536,058).

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Hearst et al. teach a protective suit comprising a chemical that will supply heat as it undergoes phase change from a solid to a liquid incorporated into an open-celled layer of the protective suit (column 1, lines 70-75). The protective suit may be a wet suit (column 1, lines 19-24). The suit comprises inner and outer layers surrounding and encapsulating the open-celled layer (Figure 3 and column 2, lines 49-56). The chemical absorbs and retains heat from the wearer thereby keeping the suit at a constant temperature and reducing heat loss from the wearer (column 3, lines 9-14). This will provide a thermal environment at a constant temperature above the ambient environmental temperature for an extended period of time. The thermal mass of the chemical is taken to be at least equal to the difference between the heat loss from the thermal storage material to the ambient environment and the heat absorbed from the wearer, otherwise the chemical would not be able to keep the suit at a constant temperature.

5. Claims 1, 2, 4, 5, 8, 9, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Bryant et al. (U.S. Patent 4,756,958).

Bryant et al. teach a fabric comprising a fiber having microcapsules encapsulating one or more phase change materials (column 2, lines 25-42). The phase change material may be a paraffin hydrocarbon exhibiting a solid-liquid transition or a plastic crystal exhibiting a solid-solid transition at or below room temperature (column 3, lines 23-55). The fabric may be formed into items of clothing (column 4, lines 37-42).

6. Claims 1, 5, 8, 9, 11, 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Senee et al. (U.S. Patent 4,894,931).

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Senee et al. teach a ski boot, which is an article of clothing, comprising a sealed enclosure encapsulating a salt that exhibits a solid-liquid phase change (column 1, lines 33-52). The salt in the sealed enclosure may be incorporated into a gel, i.e. a flexible composite (column 3, lines 16-19). In one embodiment, the sealed enclosure is attached to a lower insole made of a heat insulating material (Figure 3 and column 3, lines 28-32). The wall of the sealed enclosure reads on the thermal control layer of claims 14 and 16. The lower insole made of a heat insulating material reads on the insulative layer of claims 15 and 16 and should inherently have a greater insulative value than the wall of the sealed enclosure since it is designed to be insulative and the sealed enclosure is designed to permit heat transport between the phase change material and the wearer.

7. Claims 1-5, 8-11, 13-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Bryant et al. (U.S. Patent 5,499,460).

Bryant et al. teach a removable insole comprising a flexible base material containing microencapsulated phase change material (column 2, lines 42-60). The flexible base material may be a foam (column 3, lines 41-42). The phase change material may be a paraffin hydrocarbon exhibiting a solid-liquid transition or a plastic crystal exhibiting a solid-solid transition (column 3, line 56-column 4, line 20). The insole may have multiple layers: in one embodiment the bottom layer has no microparticles, in another both layers have microparticles (column 5, lines 23-31). Two discrete types of phase change materials may be used (column 5, lines 51-55). The wall of the microcapsule reads on the thermal control layer of claims 14 and 16. The bottom layer of the insole reads on the insulative layer of claims 15 and 16 and should

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inherently have a greater insulative value than the wall of the microcapsule since it is a foam and the microcapsule is designed to permit heat transport between the phase change material and the wearer. The insole reads on an article of clothing since it is part of a shoe or other footwear, and footwear is a type of clothing.

8. Claims 1-11 and 13-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Salyer (U.S. Patent 5,106,520) as evidenced by Bruemmer et al. (U.S. Patent 5,176,672).

Salyer teaches free flowing particles of silica with phase change material absorbed into the silica that may be incorporated into garments (column 2, lines 10-27). The garment may be a jacket (Figure 6). Alkyl hydrocarbons having a chain length of C_{14} and greater are the preferred phase change material, these exhibit a solid-liquid transition (column 4, lines 11-20). In garment applications, the silica particles are encapsulated in pouches (Figure 7 and column 8, lines 49-59). This reads on claims 8 and 11 as well as claim 9 (the pouches are taken to be flexible since they are designed to conform to the wearer). The liquid impervious enclosure and/or the pouch portions are taken to read on the thermal control layer of claim 14 and the insulative layer of claim 15 since they are both between the phase change material and the wearer as well as between the phase change material and the ambient environment. Silica is taken to be a superabsorbent material that reads on claim 7 since Bruemmer et al. discloses that silica is considered a superabsorbent material (column 8, lines 30-33).

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Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. (U.S. Patent 4,756,958).

Bryant et al. teach a fabric comprising a fiber having microcapsules encapsulating one or more phase change materials (column 2, lines 25-42). The phase change material may be a paraffin hydrocarbon exhibiting a solid-liquid transition or a plastic crystal exhibiting a solid-solid transition (column 3, lines 23-55).

Bryant et al. do not teach using the fabric to form a shirt, jacket, trousers, a blanket, a gaiter, a facial mask, a hat, an earmuff, or a liner. However, the fabric may be formed into items of clothing, such as gloves or shoes (column 4, lines 37-42).

Shirts, jackets, trousers, and liners (such as socks) are typically made from fabric and constitute items of clothing akin to gloves and shoes. Because shirts, jackets, trousers, socks, gloves and shoes are in the same family of items, one of ordinary skill in the art would have found it obvious to use the fabric of Bryant et al. to construct any common article of clothing including shirts, jackets, trousers or socks.

Therefore, the inventions of claims 17 and 18 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

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Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1, 4, 5, 8-11, 13, and 17-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21-23 of U.S. Patent No. 6,004,662. Although the conflicting claims are not identical, they are not patentably distinct from each other because by containing a phase change material, the garment, or article of clothing, will have the ability to provide a thermal environment at a temperature above the ambient temperature when used in cold environments.

Regarding instant claims 4 and 5, while claims 21-23 of U.S. Patent No. 6,004,662 recite only that a thermal storage phase change material be used, it would be obvious to one of ordinary skill in the art to use any thermal storage phase change material including ones undergoing a solid-liquid or solid-solid transition.

Regarding claims 8 and 11, at least some of the thermal storage material would be encapsulated within the internal spaces of the foam.

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13. Claims 1, 4-11, 13, and 17-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 12, 14, 15, 19, and 23 of U.S. Patent No. 6,319,599. Although the conflicting claims are not identical, they are not patentably distinct from each other because by containing a phase change material, the material will have the ability to provide a thermal environment at a temperature above the ambient temperature when used in cold environments.

Regarding instant claims 4 and 5, while claims 1 and 14 of U.S. Patent No. 6,319,599 recite only that a thermal storage phase change material be used, it would be obvious to one of ordinary skill in the art to use any thermal storage phase change material including ones undergoing a solid-liquid or solid-solid transition.

Regarding claims 8 and 11, at least some of the thermal storage material would be encapsulated within the internal spaces superabsorbent particles

14. Claims 1-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 09/990,236. Although the conflicting claims are not identical, they are not patentably distinct from each other because articles of footwear constitute articles of clothing.

Regarding claims 17 and 19, shirts, jackets, trousers, wetsuits, etc. and articles of footwear, such as socks and shoes, are all in the same family of items, i.e. clothing. Therefore, one of ordinary skill in the art would have found it obvious to make any article of clothing out of the material of Application No. 09/990,236 and not just footwear.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (703) 305-0503.

The examiner can normally be reached on Monday through Friday from 9 to 5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for non after-final correspondences and (703) 872-9311 for after-final correspondences.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

REZ

Ramsey Zacharia

3/5/02


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700